



41426-GC  
SEQUENCE LISTING

<110> Heston, Warren D.W.

Ouerfelli, Ouathek

Pinto, John

<120> PROSTATE-SPECIFIC MEMBRANE ANTIGEN AND USES THEREOF

<130> 1769/41426-GC

<140> US 10/614,625

<141> 2003-07-02

<150> US 10/433,694

<151> 2003-05-21

<150> US 08/705,477

<151> 1996-08-29

<150> PCT/US96/02424

<151> 1996-02-23

<150> US 08/466,381

<151> 1995-06-06

<150> US 08/470,735

<151> 1995-06-06

<150> US 08/394,152

<151> 1995-02-24

<160> 128

&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

&lt;211&gt; 2653

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

```

ctcaaaagg ggcggatttc cttctcctgg aggcagatgt tgcctctctc tctcgctcgg      60
attggttcag tgcactctag aaacactgct gtgggtggaga aactggaccc caggtctgga      120
gcgaattcca gcctgcaggg ctgataagcg aggcattagt gagattgaga gagactttac      180
cccgccgtgg tggttggagg gcgcgcagta gagcagcagc acaggcgcgg gtcccgaggag      240
gccggctctg ctgcgcgcga gatgtggaat ctcccttcacg aaaccgactc ggctgtggcc      300
accgcgcgcc gcccgcgctg gctgtgcgct gggcgcgctg tgctggcggg tggcttcttt      360
ctcctcggct tctctctcgg gtggtttata aaatcctcca atgaagctac taacattact      420
ccaaagcata atatgaaagc atttttggat gaattgaaag ctgagaacat caagaagttc      480
ttatataatt ttacacagat accacattta gcaggaacag aacaaaactt tcagcttgca      540
aagcaaattc aatcccagtg gaaagaatth ggcttgatt ctgttgagct agcacattat      600
gatgtcctgt tgtcctaccc aaataagact catcccaact acatctcaat aattaatgaa      660
gatggaaatg agattttcaa cacatcatta tttgaaccac ctctccagg atatgaaaat      720
gtttcggata ttgtaccacc tttcagtgtc ttctctctc aaggaatgcc agagggcgat      780
ctagtgtatg ttaactatgc acgaactgaa gacttcttta aattggaacg ggacatgaaa      840
atcaattgct ctgggaaaat tgtaattgcc agatatggga aagttttcag aggaaataag      900
gttaaaaatg ccagctggc aggggccaaa ggagtcattc tctactccga ccctgctgac      960
tactttgctc ctggggtgaa gtcctatcca gatggttga atcttctgg aggtggtgtc     1020
cagcgtggaa atatcctaaa tctgaatggt gcaggagacc ctctcacacc aggttaccca     1080
gcaaataaat atgcttatag gcgtggaatt gcagaggctg ttggtcttcc aagtattcct     1140
gttcatccaa ttggatacta tgatgcacag aagctcctag aaaaaatggg tggctcagca     1200
ccaccagata gcagctggag aggaagtctc aaagtgcctt acaatgttgg acctggcttt     1260
actggaaact tttctacaca aaaagtcaag atgcacatcc actctaccaa tgaagtgaca     1320
agaatttaca atgtgatagg tactctcaga ggagcagtgg aaccagacag atatgtcatt     1380
ctgggaggtc accgggactc atgggtgttt ggtggtattg accctcagag tggagcagct     1440

```

41426-GC

gttgttcatg aaattgtgag gagcttttga aactgaaaa aggaaggggtg gagacctaga 1500  
agaacaattt tgtttgcaag ctgggatgca gaagaatttg gtcttcttgg ttctactgag 1560  
tgggcagagg agaattcaag actccttcaa gagcgtggcg tggcttatat taatgctgac 1620  
tcacttatag aaggaaacta cactctgaga gttgattgta caccgctgat gtacagcttg 1680  
gtacacaacc taacaaaaga gctgaaaagc cctgatgaag gctttgaagg caaatctctt 1740  
tatgaaagtt ggactaaaaa aagtccttcc ccagagttca gtggcatgcc caggataagc 1800  
aaattgggat ctggaaatga ttttgagggtg ttcttccaac gacttggaat tgcttcaggc 1860  
agagcacggt atactaaaaa ttgggaaaca aacaaattca gcggctatcc actgtatcac 1920  
agtgtctatg aaacatatga gttggtgga aagttttatg atccaatgtt taaatatcac 1980  
ctcactgtgg ccaggttcg aggagggatg gtggttgagc tagccaattc catagtgtc 2040  
ccttttgatt gtcgagatta tgctgtagtt ttaagaaagt atgctgacaa aatctacagt 2100  
atttctatga aacatccaca ggaaatgaag acatacagtg tatcatttga ttcacttttt 2160  
tctgcagtaa agaattttac agaaattgct tccaagttca gtgagagact ccaggacttt 2220  
gacaaaagca acccaatagt attaagaatg atgaatgatc aactcatgtt tctggaaaga 2280  
gcattttattg atccattagg gttaccagac aggccttttt ataggcatgt catctatgct 2340  
ccaagcagcc acaacaagta tgcaggggag tcattcccag gaatttatga tgctctgttt 2400  
gatattgaaa gcaaagtga cccttccaag gcctggggag aagtgaagag acagatttat 2460  
gttgagcct tcacagtga ggcagctga gagactttga gtgaagtagc ctaagaggat 2520  
tctttagaga atccgtattg aatttgtgtg gtatgtcact cagaaagaat cgtaatgggt 2580  
atattgataa attttaaaat tgggtatattt gaaataaagt tgaatattat atataaaaaa 2640  
aaaaaaaaaa aaa 2653

<210> 2

<211> 750

<212> PRT

<213> Homo sapiens

<400> 2

Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Thr Ala Arg  
1 5 10 15

Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly Gly Phe  
20 25 30

## 41426-GC

Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu  
 35 40 45  
 Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu  
 50 55 60  
 Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu Tyr Asn Phe Thr Gln Ile  
 65 70 75 80  
 Pro His Leu Ala Gly Thr Glu Gln Asn Phe Gln Leu Ala Lys Gln Ile  
 85 90 95  
 Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His  
 100 105 110  
 Tyr Asp Val Leu Leu Ser Tyr Pro Asn Lys Thr His Pro Asn Tyr Ile  
 115 120 125  
 Ser Ile Ile Asn Glu Asp Gly Asn Glu Ile Phe Asn Thr Ser Leu Phe  
 130 135 140  
 Glu Pro Pro Pro Pro Gly Tyr Glu Asn Val Ser Asp Ile Val Pro Pro  
 145 150 155 160  
 Phe Ser Ala Phe Ser Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr  
 165 170 175  
 Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met  
 180 185 190  
 Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val  
 195 200 205  
 Phe Arg Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly  
 210 215 220  
 Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys  
 225 230 235 240  
 Ser Tyr Pro Asp Gly Trp Asn Leu Pro Gly Gly Gly Val Gln Arg Gly  
 245 250 255  
 Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro Gly Tyr  
 260 265 270  
 Pro Ala Asn Glu Tyr Ala Tyr Arg Arg Gly Ile Ala Glu Ala Val Gly  
 275 280 285

## 41426-GC

Leu Pro Ser Ile Pro Val His Pro Ile Gly Tyr Tyr Asp Ala Gln Lys  
 290 295 300  
 Leu Leu Glu Lys Met Gly Gly Ser Ala Pro Pro Asp Ser Ser Trp Arg  
 305 310 315 320  
 Gly Ser Leu Lys Val Pro Tyr Asn Val Gly Pro Gly Phe Thr Gly Asn  
 325 330 335  
 Phe Ser Thr Gln Lys Val Lys Met His Ile His Ser Thr Asn Glu Val  
 340 345 350  
 Thr Arg Ile Tyr Asn Val Ile Gly Thr Leu Arg Gly Ala Val Glu Pro  
 355 360 365  
 Asp Arg Tyr Val Ile Leu Gly Gly His Arg Asp Ser Trp Val Phe Gly  
 370 375 380  
 Gly Ile Asp Pro Gln Ser Gly Ala Ala Val Val His Glu Ile Val Arg  
 385 390 395 400  
 Ser Phe Gly Thr Leu Lys Lys Glu Gly Trp Arg Pro Arg Arg Thr Ile  
 405 410 415  
 Leu Phe Ala Ser Trp Asp Ala Glu Glu Phe Gly Leu Leu Gly Ser Thr  
 420 425 430  
 Glu Trp Ala Glu Glu Asn Ser Arg Leu Leu Gln Glu Arg Gly Val Ala  
 435 440 445  
 Tyr Ile Asn Ala Asp Ser Ser Ile Glu Gly Asn Tyr Thr Leu Arg Val  
 450 455 460  
 Asp Cys Thr Pro Leu Met Tyr Ser Leu Val His Asn Leu Thr Lys Glu  
 465 470 475 480  
 Leu Lys Ser Pro Asp Glu Gly Phe Glu Gly Lys Ser Leu Tyr Glu Ser  
 485 490 495  
 Trp Thr Lys Lys Ser Pro Ser Pro Glu Phe Ser Gly Met Pro Arg Ile  
 500 505 510  
 Ser Lys Leu Gly Ser Gly Asn Asp Phe Glu Val Phe Phe Gln Arg Leu  
 515 520 525  
 Gly Ile Ala Ser Gly Arg Ala Arg Tyr Thr Lys Asn Trp Glu Thr Asn  
 530 535 540

## 41426-GC

Lys Phe Ser Gly Tyr Pro Leu Tyr His Ser Val Tyr Glu Thr Tyr Glu  
545 550 555 560

Leu Val Glu Lys Phe Tyr Asp Pro Met Phe Lys Tyr His Leu Thr Val  
565 570 575

Ala Gln Val Arg Gly Gly Met Val Phe Glu Leu Ala Asn Ser Ile Val  
580 585 590

Leu Pro Phe Asp Cys Arg Asp Tyr Ala Val Val Leu Arg Lys Tyr Ala  
595 600 605

Asp Lys Ile Tyr Ser Ile Ser Met Lys His Pro Gln Glu Met Lys Thr  
610 615 620

Tyr Ser Val Ser Phe Asp Ser Leu Phe Ser Ala Val Lys Asn Phe Thr  
625 630 635 640

Glu Ile Ala Ser Lys Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys Ser  
645 650 655

Asn Pro Ile Val Leu Arg Met Met Asn Asp Gln Leu Met Phe Leu Glu  
660 665 670

Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg  
675 680 685

His Val Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser  
690 695 700

Phe Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp  
705 710 715 720

Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala Ala  
725 730 735

Phe Thr Val Gln Ala Ala Ala Glu Thr Leu Ser Glu Val Ala  
740 745 750

<210> 3

<211> 8

<212> PRT

<213> Homo sapiens

<220>

<221> MISC\_FEATURE

<222> (6)..(6)

<223> x=any amino acid

<220>

<221> MISC\_FEATURE

<222> (6)..(6)

<223> Xaa=any amino acid

<400> 3

Ser Leu Tyr Glu Ser Xaa Thr Lys  
1 5

<210> 4

<211> 15

<212> PRT

<213> Homo sapiens

<220>

<221> MISC\_FEATURE

<222> (1)..(1)

<223> Xaa=any amino acid

<220>

<221> MISC\_FEATURE

<222> (6)..(6)

<223> Xaa=any amino acid

<220>

<221> MISC\_FEATURE

<222> (12)..(12)

<223> Xaa=any amino acid

41426-GC

<400> 4

Xaa Tyr Pro Asp Gly Xaa Asn Leu Pro Gly Gly Xaa Val Gln Arg  
1 5 10 15

<210> 5

<211> 7

<212> PRT

<213> Homo sapiens

<400> 5

Phe Tyr Asp Pro Met Phe Lys  
1 5

<210> 6

<211> 9

<212> PRT

<213> Homo sapiens

<400> 6

Ile Tyr Asn Val Ile Gly Thr Leu Lys  
1 5

<210> 7

<211> 22

<212> PRT

<213> Homo sapiens

<220>

<221> MISC\_FEATURE

<222> (4)..(5)

<223> Xaa=any amino acid

<400> 7

Phe Leu Tyr Xaa Xaa Thr Gln Ile Pro His Leu Ala Gly Thr Glu Gln  
1 5 10 15



41426-GC

Asn Phe Gln Leu Ala Lys  
20

<210> 8

<211> 17

<212> PRT

<213> Homo sapiens

<400> 8

Gly Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Asp Val  
1 5 10 15

Lys

<210> 9

<211> 17

<212> PRT

<213> Homo sapiens

<400> 9

Pro Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val  
1 5 10 15

Lys

<210> 10

<211> 15

<212> PRT

<213> Homo sapiens

<400> 10

Ala Phe Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg  
1 5 10 15

<210> 11

<211> 19

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 11

Tyr Ala Gly Glu Ser Phe Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile  
 1 5 10 15

Glu Ser Lys

&lt;210&gt; 12

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; MISC\_FEATURE

&lt;222&gt; (7)..(7)

&lt;223&gt; Xaa=any amino acid

&lt;220&gt;

&lt;221&gt; MISC\_FEATURE

&lt;222&gt; (14)..(16)

&lt;223&gt; Xaa=any amino acid

&lt;400&gt; 12

Thr Ile Leu Phe Ala Ser Xaa Asp Ala Glu Glu Phe Gly Xaa Xaa Xaa  
 1 5 10 15

Ser Thr Glu Glu Ala Glu  
 20

&lt;210&gt; 13

&lt;211&gt; 17

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<220>

<221> misc\_feature

<222> (12)..(12)

<223> n=any nucleotide

<400> 13

ttytaygayc cnatggt

17

<210> 14

<211> 17

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (6)..(6)

<223> n=any nucleotide

<400> 14

aacatnggrt crtaraa

17

<210> 15

<211> 17

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (12)..(12)

<223> n=any nucleotide

<400> 15

athtayaayg tnathgg

17

<210> 16  
<211> 17  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (6)..(6)  
<223> n=any nucleotide

<400> 16  
ccdatnacrt trtadat

17

<210> 17  
<211> 17  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (3)..(3)  
<223> n=any nucleotide

<220>  
<221> misc\_feature  
<222> (6)..(6)  
<223> n=any nucleotide

<400> 17  
ccngcngayt ayttygc

17

<210> 18  
<211> 17  
<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (12)..(12)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (15)..(15)

<223> n=any nucleotide

<400> 18  
gcraartart cngcngg

17

<210> 19

<211> 20

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (3)..(3)

<223> n=any nucleotide

<400> 19  
acngarcara ayttycarct

20

<210> 20

<211> 20

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature  
 <222> (18)..(18)  
 <223> n=any nucleotide

<400> 20  
 agytgraart tytgytcngt 20

<210> 21  
 <211> 17  
 <212> DNA  
 <213> Homo sapiens

<400> 21  
 garcaraayt tycarct 17

<210> 22  
 <211> 17  
 <212> DNA  
 <213> Homo sapiens

<400> 22  
 agytgraart tytgytc 17

<210> 23  
 <211> 20  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (9)..(9)  
 <223> n=any nucleotide

<400> 23  
 tgggaygcng argarttygg 20

<210> 24

<211> 20

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (12)..(12)

<223> n=any nucleotide

<400> 24

ccraaytcyt cngcrtccca

20

<210> 25

<211> 17

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (9)..(9)

<223> n=any nucleotide

<400> 25

tgggaygcng argartt

17

<210> 26

<211> 17

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (9)..(9)

<223> n=any nucleotide

<400> 26  
aaytcytcng crtccca .

17

<210> 27

<211> 780

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (82)..(84)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (193)..(193)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (196)..(197)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (217)..(219)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (232)..(233)



<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (237)..(238)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (253)..(256)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (263)..(263)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (600)..(601)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (721)..(724)

<223> n=any nucleotide

<400> 27

tacacttatac ccattcggac atgccacact tggaactgga gacccttaca ccccaggctt 60

cccttcgttc aaccacaccc annngtttcc accagttgaa tcttcaggac taccacacat 120

tgctgttcag accatctcta gcagtgcagc agccaggctg ttcagcaaaa tggatggaga 180

cacatgctct ganagnngtt ggaaaggtgc gatccannnt tcctgtaagg tnngacnnaa 240

caaagcagga gannnngcca gantaatggt gaaactagat gtgaacaatt ccatgaaaga 300

41426-GC

|  |     |
|--|-----|
| caggaagatt ctgaacatct tcggtgctat ccagggattt gaagaacctg atcggtatgt  | 360 |
| tgtgattgga gcccagagag actcctgggg cccaggagtg gctaaagctg gcaactggaac | 420 |
| tgctatattg ttggaacttg cccgtgtgat ctgagacata gtgaaaaacg agggctacaa  | 480 |
| accgaggcga agcatcatct ttgctagctg gagtgcagga gactacggag ctgtgggtgc  | 540 |
| tactgaatgg ctggaggggt actctgccat gctgcatgcc aaagctttca cttacatcan  | 600 |
| ngcttggatg ctccagtcct gggagcaagc catgtcaaga tttctgccag ccccttgctg  | 660 |
| tatatgctgc tggggagtat tatgaagggg gtgaagaatc cagcagcagt ctgagagagc  | 720 |
| nnnctctat aacagacttg gcccagactg ggtaaaagca gttgttcctc ttggcctgga   | 780 |

<210> 28

<211> 660

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (224)..(224)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (255)..(255)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (412)..(414)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (433)..(433)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (520)..(521)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (536)..(543)

<223> n=any nucleotide

<400> 28

|   |     |
|---|-----|
| tgcagaaaag ctattcaaaa acatggaagg aaactgtcct cctagttgga atatagattc   | 60  |
| ctcatgtaag ctggaacttt cacagaatca aaatgtgaag ctactgtga acaatgtact    | 120 |
| gaaagaaaca agaataactta acatctttgg cgttattaaa ggctatgagg aaccagaccg  | 180 |
| ctacattgta gtaggagccc agagagacgc ttggggccct ggtngttgcg aagtccagtg   | 240 |
| tgggaacagg tcttntctgtt gaaacttgcc caagtattct cagatatgat ttcaaaagat  | 300 |
| ggatttagac ccagcaggag tattatcttt gccagctgga ctgcaggaga ctatggagct   | 360 |
| gttgggtccga ctgagtggct ggaggggtac ctttcatctt tgcattctaaa gnnngctttc | 420 |
| acttacatta atnctggata aagtcgtcct gggtagtagc aacttcaagg tttctgccag   | 480 |
| ccccctatta tatacactta tggggaagat aatgcaggan ncgtaaagca tccgannnnn   | 540 |
| nnnttgatgg aaaatatcta tatcgaaaca gtaattggat tagcaaaatt gaggaacttt   | 600 |
| ccttggacaa tgctgcattc ccttttcttg catattcagg aatcccagca gtttctttct   | 660 |

<210> 29

<211> 540

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (214)..(214)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (377)..(377)

<223> n=any nucleotide

<400> 29  
 tatggaagga gactgtccct ctgactggaa aacagactct acatgtagga tggtaacctc 60  
 agaaagcaag aatgtgaagc tcaactgtgag caatgtgctg aaagagataa aaattcttaa 120  
 catcttttga gttattaaag gctttttaga accagatcac tatgtttag tagggggccca 180  
 gagagatgca tggggccctg gagctgcaaa atcncggtgt aggcacagct ctctattga 240  
 aacttgccca gatgttctca gatatgggtct taaaagatgg gtttcagccc agcagaagca 300  
 ttatctttgc cagttggagt gctggagact ttggatcggg tggtgccact gaatggctag 360  
 agggatacct ttcgtnccct gcatttaaag gctttcactt atattaatct ggataaagcg 420  
 gttcttggtg ccagcaactt caagggttct gccagcccac tgttgatata gcttattgag 480  
 aaaacaatgc aaaatgtgaa gcatccggtt actgggcaat ttctatatca ggacagcaac 540

<210> 30

<211> 27

<212> DNA

<213> Homo sapiens

<400> 30  
 acggagcaaa acttttcagct tgcaaag 27

<210> 31

<211> 9

<212> PRT

<213> Homo sapiens

<400> 31

Thr Glu Gln Asn Phe Gln Leu Ala Lys  
 1 5

41426-GC

<210> 32

<211> 36

<212> DNA

<213> Homo sapiens

<400> 32

ctcttcggca tcccagcttg caaacaaaat tggtct

36

<210> 33

<211> 36

<212> DNA

<213> Homo sapiens

<400> 33

agaacaattt tgtttgcaag ctgggatgcc aaggag

36

<210> 34

<211> 12

<212> PRT

<213> Homo sapiens

<400> 34

Arg Thr Ile Leu Phe Ala Ser Trp Asp Ala Glu Glu  
1 5 10

<210> 35

<211> 6

<212> PRT

<213> Homo sapiens

<400> 35

Asp Glu Leu Lys Ala Glu  
1 5

<210> 36

<211> 6

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 36

Asn Glu Asp Gly Asn Glu  
 1 5

&lt;210&gt; 37

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 37

Lys Ser Pro Asp Glu Gly  
 1 5

&lt;210&gt; 38

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 38

Ala Gly Ala Leu Val Leu Ala Gly Gly Phe Phe Leu Leu Gly Phe Leu  
 1 5 10 15

Phe

&lt;210&gt; 39

&lt;211&gt; 3017

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 39

aagggtgctc cttaggctga atgcttgacg acaggatgct tggttacaga tgggctgtga 60

ctcgagtgga gttttataag ggtgctcctt aggctgaatg cttgcagaca ggatgcttgg 120

ttacagatgg gctgtgagct ggggtgcttgt aagaggatgc ttgggtgcta agtgagccat 180

## 41426-GC

|   |      |
|---|------|
| ttgcagttga ccctattctt ggaacattca ttcccctcta cccctgtttc tgttcctgcc   | 240  |
| agctaagccc atttttcatt tttcttttaa ctcccttagcg ctccgcaaaa cttaatcaat  | 300  |
| ttcttttaaac ctccagttttc ttatctgtaa aaggtaaata ataatacagg gtgcaacaga | 360  |
| aaaatctagt gtggtttaca taatcacctg ttagagattt taaattattt caggataagt   | 420  |
| catgataatt aaatgaaata atgcacataa agcacatagt gtggtgtcct ccatatagaa   | 480  |
| aatgctcagt atattggtta ttaactactt gttgaagggt tatctttctcc actaaactgt  | 540  |
| aagttccaca agccttacaa tatgtgacag atattcattc attgtctgaa ttcttcaa     | 600  |
| acatcctctt caccatagcg tcttattaat tgaattatta attgaataaa ttctattggt   | 660  |
| caaaaatcac ttttatattt aactgaaatt tgcttactta taatcacatc taaccttcaa   | 720  |
| agaaaacaca ttaaccaact gtactgggta atgttactgg gtgatccac gttttacaaa    | 780  |
| tgagaagata tattctggta agttgaatac ttagcaccca ggggtaatca gcttggacag   | 840  |
| gaccaggtcc aaagactgtt aagagtcttc tgactccaaa ctccagtgtc cctccagtgc   | 900  |
| cacaagcaaa ctccataaag gtatcctgtg ctgaatagag actgtagagt ggtacaaagt   | 960  |
| aagacagaca ttatattaag tcttagcttt gtgacttcca atgacttacc taatctagct   | 1020 |
| aaatttcagt ttaccatgt gtaaatacagg aagagtaata gaacaaacct tgaagggtcc   | 1080 |
| caatggtgat taaatgaggt gatgtacata acatgcatca ctcataataa gtgctcttta   | 1140 |
| aatattagtc actattatta gccatctctg attagatttg acaataggaa cattaggaaa   | 1200 |
| gatatagtac attcaggatt ttgttagaaa gagatgaaga aattcccttc ctccctgccc   | 1260 |
| taggtcatct aggagtgtc atggttcatt gttgacaaat taattttccc aaatttttca    | 1320 |
| ctttgtcag aaagtctaca tcgaagcacc caagactgta caatctagtc catctttttc    | 1380 |
| cacttaactc atactgtgt ctccctttct caaagcaaac tgtttgctat tccttgaata    | 1440 |
| cactctgagt tttctgcctt tgcctactca gctggcccat ggcccctaatt gtttcttctc  | 1500 |
| atctccactg ggtcaaatac tacctgtacc ttatggttct gttaaaagca gtgcttccat   | 1560 |
| aaagtactcc tagcaaatgc acggcctctc tcacggatta taagaacaca gtttatatta   | 1620 |
| taaagcatgt agctattctc tccctcgaaa tacgattatt attattaaga atttatagca   | 1680 |
| gggatataat tttgtatgat gattcttctg gttaatccaa ccaagattga ttttatatct   | 1740 |
| attacgtaag acagtagcca gacatagccg ggatatgaaa ataaagtctc tgccttcaac   | 1800 |
| aagttccagt attcttttct ttcctccct cccctccct cccctccct cccctccct       | 1860 |
| ccctttccct tcccttccct tctttcttga gggagtctca ctctgtcacc aggctccagt   | 1920 |
| gcagtggcgc tatcttggct gactgcaacc tccgcctccc cggttcaagc gattctcctg   | 1980 |
| cctcagctc ctgagtagct gggactacag gagcccgcga ccacgcccag ctaatttttg    | 2040 |
| tatttttagt agagatgggg tttcaccatg ttggccagga tggctcgcgt ttctcgactt   | 2100 |

41426-GC

cgtgatccgc ctgtctgggc ctcccaaagt gctgggatta caggcgtgag ccaccacgcc 2160  
 cggctttaaa aaatggtttt gtaatgtaag tggaggataa taccctacat gtttattaat 2220  
 aacaataata ttcttttagga aaaagggcgc ggtgggtgatt tacactgatg acaagcattc 2280  
 ccgactatgg aaaaaaagcg cagctttttc tgctctgctt ttattcagta gagtattgta 2340  
 gagattgtat agaatttcag agttgaataa aagttcctca taattatagg agtggagaga 2400  
 ggagagtctc tttcttcctt tcattttttat atttaagcaa gagctggaca ttttccaaga 2460  
 aagttttttt tttttaaggc gcctctcaaa aggggccgga tttccttctc ctggaggcag 2520  
 atgttgctc tctctctcgc tcggattggt tcagtgcact ctagaaacac tgctgtggtg 2580  
 gagaaactgg accccaggtc tggagcgaat tccagcctgc agggctgata agcgaggcat 2640  
 tagtgagatt gagagagact ttaccccgcc gtggtggttg gagggcgcg agtagagcag 2700  
 cagcacaggc gcgggtcccg ggaggccggc tctgctcgcg ccgagatgtg gaatctcctt 2760  
 cacgaaaccg actcggctgt ggccaccgcg cgccgccgcg gctggctgtg cgctggggcg 2820  
 ctggtgctgg cgggtggctt ctttctctc ggcttcctct tcggtagggg ggcgccctcgc 2880  
 ggagcaaacc tcggagtctt ccccggtgtg ccgcggtgct gggactcgcg ggtcagctgc 2940  
 cgagtgggat cctgttgctg gtcttcccca ggggcggcga ttagggtcgg ggtaatgtgg 3000  
 ggtgagcacc cctcgag 3017

<210> 40

<211> 15

<212> DNA

<213> Homo sapiens

<400> 40

cggcttctc ttccg

15

<210> 41

<211> 44

<212> DNA

<213> Homo sapiens

<400> 41

cggcttctc ttccgtaggg gggcgccctc cggagtattt ttca

44

<210> 42



<211> 16

<212> DNA

<213> Homo sapiens

<400> 42

ataaaaagtc accaaa

16

<210> 43

<211> 15

<212> DNA

<213> Homo sapiens

<400> 43

acatcaagaa gttct

15

<210> 44

<211> 36

<212> DNA

<213> Homo sapiens

<400> 44

acatcaagaa gttctcaagt aagtcctaac tcgaag

36

<210> 45

<211> 22

<212> DNA

<213> Homo sapiens

<400> 45

caagtgggtca tatattaaaa tg

22

<210> 46

<211> 15

<212> DNA

<213> Homo sapiens

<400> 46  
gaagatggaa atgag 15

<210> 47

<211> 38

<212> DNA

<213> Homo sapiens

<400> 47  
gaagatggaa atgaggtaaa atataaataa ataaataa 38

<210> 48

<211> 15

<212> DNA

<213> Homo sapiens

<400> 48  
taaaagttgt gtagt 15

<210> 49

<211> 15

<212> DNA

<213> Homo sapiens

<400> 49  
aaggaatgcc agagg 15

<210> 50

<211> 35

<212> DNA

<213> Homo sapiens

<400> 50  
aaggaatgcc agaggtaaaa acacagtgca acaaa 35

<210> 51

<211> 20

<212> DNA

<213> Homo sapiens

<400> 51  
agagttgccg ctagatcaca

20

<210> 52

<211> 15

<212> DNA

<213> Homo sapiens

<400> 52  
cagaggaaat aaggt

15

<210> 53

<211> 37

<212> DNA

<213> Homo sapiens

<400> 53  
cagaggaaat aaggtaggta aaaattatct cttttt

37

<210> 54

<211> 21

<212> DNA

<213> Homo sapiens

<400> 54  
gtgttttcta tttttacggg t

21

<210> 55

<211> 15

<212> DNA

<213> Homo sapiens

<400> 55  
gttaccacgc aaatg

15

<210> 56  
 <211> 35  
 <212> DNA  
 <213> Homo sapiens

<400> 56  
 gttaccacgac aatgggtgaat gatcaatcct tgaat 35

<210> 57  
 <211> 20  
 <212> DNA  
 <213> Homo sapiens

<400> 57  
 aaaaaaagtt tatacgaata 20

<210> 58  
 <211> 15  
 <212> DNA  
 <213> Homo sapiens

<400> 58  
 acagaagctc ctaga 15

<210> 59  
 <211> 37  
 <212> DNA  
 <213> Homo sapiens

<400> 59  
 acagaagctc ctagagtaag tttgtaagaa accargg 37

<210> 60  
 <211> 24  
 <212> DNA

<213> Homo sapiens

<400> 60  
aaacacaggt tatcttttta ccca

24

<210> 61

<211> 15

<212> DNA

<213> Homo sapiens

<400> 61  
aaacttttct acaca

15

<210> 62

<211> 38

<212> DNA

<213> Homo sapiens

<400> 62  
aaacttttct acacagttaa gagactatat aaatttta

38

<210> 63

<211> 24

<212> DNA

<213> Homo sapiens

<400> 63  
aaacgtaatc attttcagtt ctac

24

<210> 64

<211> 14

<212> DNA

<213> Homo sapiens

<400> 64  
agcagtggaa ccag

14

<210> 65

<211> 36

<212> DNA

<213> Homo sapiens

<400> 65

agcagtggaa ccaggtaaag gaatcgtttg ctagca

36

<210> 66

<211> 19

<212> DNA

<213> Homo sapiens

<400> 66

aaagatgtct atacagtaa

19

<210> 67

<211> 14

<212> DNA

<213> Homo sapiens

<400> 67

ctgaaaaagg aagg

14

<210> 68

<211> 36

<212> DNA

<213> Homo sapiens

<400> 68

ctgaaaaagg aaggtaatac aaacaaatag caagaa

36

<210> 69

<211> 14

<212> DNA

<213> Homo sapiens

<400> 69  
tgagtgggca gagg 14

<210> 70

<211> 30

<212> DNA

<213> Homo sapiens

<400> 70  
agaggttagt tggtaatttg ctataatata 30

<210> 71

<211> 12

<212> DNA

<213> Homo sapiens

<400> 71  
atctatagaa gg 12

<210> 72

<211> 32

<212> DNA

<213> Homo sapiens

<400> 72  
gtagtttcct gaaaaataag aaaagaatag at 32

<210> 73

<211> 12

<212> DNA

<213> Homo sapiens

<400> 73  
ctaacaaaag ag 12

<210> 74

<211> 36

<212> DNA

<213> Homo sapiens

<400> 74

agggccttttc agctacacaa attaaaagaa aaaaag

36

<210> 75

<211> 14

<212> DNA

<213> Homo sapiens

<400> 75

gtggcatgcc cagg

14

<210> 76

<211> 37

<212> DNA

<213> Homo sapiens

<400> 76

gtggcatgcc caggtaaata aatgaatgaa gtttcca

37

<210> 77

<211> 12

<212> DNA

<213> Homo sapiens

<400> 77

ctaaaaattg gc

12

<210> 78

<211> 36

<212> DNA

<213> Homo sapiens



<400> 78  
aatttgtttg tttcctacag aaaaaacaac aaaaca 36

<210> 79

<211> 14

<212> DNA

<213> Homo sapiens

<400> 79  
cagtgtatca tttg 14

<210> 80

<211> 40

<212> DNA

<213> Homo sapiens

<400> 80  
cagtgtatca tttggtatgt tacccttcct ttttcaaatt 40

<210> 81

<211> 16

<212> DNA

<213> Homo sapiens

<400> 81  
aaagtctaag tgaaaa 16

<210> 82

<211> 14

<212> DNA

<213> Homo sapiens

<400> 82  
tttgacaaaa gcaa 14

<210> 83

<211> 39

<212> DNA

<213> Homo sapiens

<400> 83

tttgacaaaa gcaagtatgt tctacatata tgtgcatat

39

<210> 84

<211> 18

<212> DNA

<213> Homo sapiens

<400> 84

aaagagtcgg gttatcat

18

<210> 85

<211> 14

<212> DNA

<213> Homo sapiens

<400> 85

ggccttttta tagg

14

<210> 86

<211> 37

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (20)..(20)

<223> n=any nucleotide

<400> 86

ggccttttta taggtaagan aagaaaatat gactcct

37

<210> 87

41426-GC

<211> 20

<212> DNA

<213> Homo sapiens

<400> 87

aatagttggt acagtagata

20

<210> 88

<211> 14

<212> DNA

<213> Homo sapiens

<400> 88

gaatattata tata

14

<210> 89

<211> 41

<212> DNA

<213> Homo sapiens

<400> 89

gaatattata tatagttatg tgagtgttta tatatgtgtg t

41

<210> 90

<211> 3077

<212> DNA

<213> Homo sapiens

<400> 90

gcgctttaa aaaaaaaaaac tttcttggaa aatgtccagc tcttgcttaa atataaaaat 60

gaaaggaaga aagagactct cctctctcca ctctataat tatgaggaac ttttattcaa 120

ctctgaaatt ctatacaatc tctacaatac tctactgaat aaaagcagag cagaaaaagc 180

tgcgcttttt ttccatagtc gggaaatgctt gtcatcagtg taaatcacca ccgcgcctt 240

tttcctaaag aatattattg ttattaataa acatgtaggg tattatcctc cacttacatt 300

acaaaaccat tttttaagc cgggcgtggt ggctcacgcc tgtaatccca gcactttggg 360

aggcccagac aggcggatca cgaagtcgag aaatcgagac catcctggcc aacatggtga 420

41426-GC

|   |      |
|---|------|
| aaccccatct ctactaaaaa tacaaaaaatt agctgggcgt ggtggcgggc tectgtagtc  | 480  |
| ccagctactc aggaggctga ggcaggagaa tcgcttgaac cggggaggcc gaggttgag    | 540  |
| tcagccaaga tagcgccact gcactggagc ctggtgacag agtgagactc cctcaagaaa   | 600  |
| gaaaggaagg gaagggaaag ggaaggaagg ggaggggaag ggaggggagg ggaggggagg   | 660  |
| aaagaaaaga atactggaac ttgttgaagg cagagacttt attttcatat cccggctatg   | 720  |
| tctggctact gtcttacgta atagatataa aatcaatctt ggttgatta accagaagaa    | 780  |
| tgagaagata tattctggta agttgaatac ttagcaccca ggggtaatca gcttgagacag  | 840  |
| gaccaggctc aaagactgtt aagagtcttc tgactccaaa ctgagtgtc cctccagtgc    | 900  |
| cacaagcaaa ctccataaag gtatcctgtg ctgaatagag actgtagagt ggtacaaagt   | 960  |
| aagacagaca ttatatataa tcttagcttt gtgacttcga atgacttacc taatctagct   | 1020 |
| aaatttcagt ttaccatgt gtaaatacagg aagagtaata gaacaaacct tgaagggtcc   | 1080 |
| caatggtgat taaatgaggt gatgtacata acatgcatca ctcataataa gtgctcttta   | 1140 |
| aatattagtc actattatta gccatctctg attagatttg acaataggaa cattaggaaa   | 1200 |
| gatatagtac attcaggatt ttgttagaaa gagatgaaga aattcccttc ctctctgccc   | 1260 |
| taggtcatct aggagttgtc atggttcatt gttgacaaat taattttccc aaatttttca   | 1320 |
| ctttgctcag aaagtctaca tcgaagcacc caagactgta caatctagtc catctttttc   | 1380 |
| cacttaactc atactgtgct ctccctttct caaagcaaac tgtttgctat tccttgaata   | 1440 |
| cactctgagt tttctgcctt tgcctactca gctggcccat ggcccctaatt gtttcttctc  | 1500 |
| atctccactg ggtcaaatcc tacctgtacc ttatggttct gttaaaagca gtgcttccat   | 1560 |
| aaagtactcc tagcaaatgc acggcctctc tcacgcatta taagaacaca gtttatttta   | 1620 |
| tttcatgagg atcgttttacg tgccggagag agtgcctaatt attcttgtgt caaataaaat | 1680 |
| taaagcatgt agctattctc tccctcgaaa tacgattatt attattaaga atttatagca   | 1740 |
| gggatataat tttgtatgat gattcttctg gttaatccaa ccaagattga ttttatatct   | 1800 |
| attacgtaag acagtagcca gacatagccg ggatatgaaa ataaagtctc tgccttcaac   | 1860 |
| aagttccagt attcttttct ttctccct ccctccct ccctccct ccccttctt          | 1920 |
| ccctttccct tcccttctt tctttcttga gggagtctca ctctgtcacc aggctccagt    | 1980 |
| gcagtgccgc tatcttggt gactgcaacc tccgcctccc cggttcaagc gattctctctg   | 2040 |
| cctcagctc ctgagtagct ggcactacag gagcccgcca ccacgcccag ctaatttttg    | 2100 |
| tatttttagt agagatgggg tttcaccatg ttggccagga tggctctgat ttctcgactt   | 2160 |
| cgtgatccgc ctgtctgggc ctcccaaagt gctgggatta caggcgtgag ccaccacgcc   | 2220 |
| cgcctttaa aaatggtttt gtaatgtaag tggaggataa taccctacat gtttattaat    | 2280 |
| aacaataata ttcttttagga aaaaggccgc ggtggtgatt tacactgatg acaagcattc  | 2340 |

41426-GC

|  |      |
|--|------|
| ccgactatgg aaaaaaagcg cagctttttc tgctctgctt ttattcagta gagtattgta  | 2400 |
| gagattgtat agaatttcac agttgaataa aagttcctca taattatagg agtggagaga  | 2460 |
| ggagagtctc tttcttcctt tcatttttat atttaagcaa gagctggaca tttccaaga   | 2520 |
| aagttttttt tttttaaggc gcctctcaaa aggggccgga tttccttctc ctggaggcag  | 2580 |
| atgttgccctc tctctctcgc tcggattggt tcagtgcact ctagaaacac tgctgtggtg | 2640 |
| gagaaactgg accccaggctc tgcagcgaat tccagcctgc agggctgata agcgaggcat | 2700 |
| tagtgagatt gagagagact ttaccccgcc gtggtggttg gagggcgcg ctagagagcag  | 2760 |
| cagcacaggc gcgggtcccg ggaggccggc tctgctcgcg ccgagatgtg gaatctcctt  | 2820 |
| cacgaaaccg actcggtgtt ggccaccgcg cgccgccgcg gctggctgtg cgctggggcg  | 2880 |
| ctggtgctgg cggggtggctt cttctctctc ggcttcctct tcggtagggg ggcgcctcgc | 2940 |
| ggagcaaacc tcggagtctt ccccggtgtg ccgcgctgct gggactcgcg ggtcagctgc  | 3000 |
| cgagtgggat cctgttgctg gtcttcccca ggggcggcga ttagggtcgg ggtaatgtgg  | 3060 |
| ggtgagcacc cctcgag   | 3077 |

<210> 91

<211> 519

<212> DNA

<213> Homo sapiens

|   |     |
|---|-----|
| <400> 91  |     |
| ctcaaaaggg gccggatttc cttctcctgg aggcagatgt tgctctctc tctcgctcgg  | 60  |
| attggttcag tgcactctag aaacactgct gtggtggaga aactggaccc caggtctgga | 120 |
| gcgaattcca gcctgcaggg ctgataagcg aggcattagt gagattgaga gagactttac | 180 |
| cccgccgtgg tggttggagg gcgcgcagta gagcagcagc acaggcgcg gtcccgggag  | 240 |
| gccggctctg ctgcgcgcca gatgtggaat ctccctcacg aaaccgactc ggctgtggcc | 300 |
| accgcgcgcc gcccgcgctg gctgtgcgct ggggcgctgg tgctggcggg tggcttcttt | 360 |
| ctcctcggct tctcttctcg atggtttata aaatcctcca atgaagctac taacattact | 420 |
| ccaaagcata atatgaaagc atttttggat gaatggaaag ctgagaacat caagaagtgc | 480 |
| ttatataatt ttacacagat accacattta gcaggaaca                        | 519 |

<210> 92

<211> 2125

<212> DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 92

|             |             |            |             |            |             |      |
|-------------|-------------|------------|-------------|------------|-------------|------|
| tagggggg    | cctcgcgag   | aaacctcgga | gtcttccccg  | tggtgccgcg | gtgctgggac  | 60   |
| tcgcggtca   | gctgccgagt  | gggatcctgt | tgctgggtctt | ccccaggggc | ggcgattagg  | 120  |
| gtcggggtaa  | tgtgggggtga | gcacccctcg | agttaggagg  | agggtagctg | ggaacggtgc  | 180  |
| agggtgagt   | tctcgacaag  | ctgctggtag | gacagtcact  | cagggtgagg | gtagaactga  | 240  |
| gagaacctga  | aactgggcgt  | aggaagggtc | caagtgctgg  | agccctgcaa | gacagaggaa  | 300  |
| gttttttttt  | tgcttttgtt  | ttgttttgtt | ttgttttgtt  | ttgttttgtt | tgtttgtttg  | 360  |
| tttttttacc  | tctctgtgca  | ttctttcttc | cttggaagta  | acagaggcaa | gcttgggaac  | 420  |
| tgtgtgaacc  | aggtcaccaa  | tctcgacagg | tctttaccag  | cgggtctttt | gctgtttttc  | 480  |
| ctgggtactg  | atttgcagac  | ttgatccaac | tttctaagaa  | aagcagaacc | acacaggcaa  | 540  |
| gctcagactc  | ttttattaaa  | ttccagtttt | gactttgcca  | cttcttagtg | gcottgaaca  | 600  |
| agttaccgag  | tccctctcag  | cgttagttac | cctattttat  | gatgaggata | atattatctg  | 660  |
| caaattattg  | gtaatagtaa  | ataatatagc | atgtaaatct  | cctagcacag | tactgggatt  | 720  |
| ttcgccactt  | tattttcttct | tttaccaaga | tactcctcat  | tggaacttta | tacacaggac  | 780  |
| tagtctaagg  | tatcaccagg  | tagtccactc | ctgctcgga   | ttcttgacct | tctttcggga  | 840  |
| tttagaagaa  | tagggcatgg  | accagatggg | tttaaacaaa  | ttcaatatct | tccactagct  | 900  |
| tcaccttggg  | gttggttaaaa | gatttttgaa | ccacacactg  | tgctcataac | aatcttcac   | 960  |
| tcttaaaagg  | attttattct  | tcctggtatt | gccctcactc  | tcacccctgt | attccgtgct  | 1020 |
| cagtggctga  | cacagaagag  | ttctttattg | atgtccgccc  | cccacccact | aggattctct  | 1080 |
| gctctccct   | ccccctacag  | gcctccatcc | tcttcacctc  | gttcattttt | cagatctcag  | 1140 |
| ttcaagcatc  | tcgtcctcag  | tgtgggtgtt | cctgatccct  | cactctaata | caagtctttc  | 1200 |
| tgttttatgc  | acagggtggaa | tcttattttc | gtttgcgtcc  | aatcatgtat | tttaatatgc  | 1260 |
| atgtatatat  | gtatgtgcat  | ttgtatgcat | gcgattaaga  | actagaataa | ttaataattg  | 1320 |
| gaaagctcca  | tgaaagctgg  | ttggggacta | attttgtaac  | tactttattc | ccacatcctg  | 1380 |
| taatttctct  | aaataaacc   | tggaatcttg | ccttatctcc  | ttcagggtta | aagccaactg  | 1440 |
| caagggtctaa | tgactgcagg  | atctagctat | ccattgtttc  | tgccgccta  | tgcggtgcact | 1500 |
| gggtgtctgg  | cagagaggct  | gggtaaattg | tagtttcatt  | gtagctgtct | gacttggtat  | 1560 |
| tctcacgcct  | acttcactgg  | aaacgcaaac | tctcacagca  | ttttctttta | gtttcagaat  | 1620 |
| cagagcaa    | atagaagtctg | aatttccttc | aacacttgga  | aataatttat | ttatttgaaa  | 1680 |
| tatattcata  | attaattcgt  | tataaaaatg | tattaaatgc  | ttatttgagt | cagcagagga  | 1740 |
| agatagaaac  | tttatgaaag  | tagaagggtg | atctcctttt  | tgcttcatt  | ttcagaacat  | 1800 |

41426-GC

```
ctcgtttaca cccattagtt gaaacattaa tgtcatttta ttttcgtcct gattatctca 1860
taaaacattt cttagaataa cagcaatacc tatcattgaa gttggataag aaatattttg 1920
caattggttt gcaacttaaa aatctgtttg catgactctt tttcagtga agtaggcaag 1980
agaaattaaa attcagaaat atgtgaccta atgtcagagg taatattgat aatttgtgtt 2040
ttacaaataa tacatacaac aataatgaaa aataagtcct atctatagga tcgtatctca 2100
tgcctatttt tggatgtatt tttca 2125
```

<210> 93

<211> 1896

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (634)..(650)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (950)..(961)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (1045)..(1045)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (1103)..(1103)

<223> n=any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1362)..(1369)

&lt;223&gt; n=any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1533)..(1534)

&lt;223&gt; n=any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1616)..(1617)

&lt;223&gt; n=any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1783)..(1783)

&lt;223&gt; n=any nucleotide

&lt;400&gt; 93

|  |     |
|--|-----|
| tgaaaaatag atgaaaaata ggcattgagat acgagcctat agataggact tattttttat   | 60  |
| tattgttgta tgtattattht gtaaaacaca aattatcaat attacctctg acattagggtg  | 120 |
| agatattctg aatttttaatt tctcttgcct actttcactg aaaaagagtc atgcaaacag   | 180 |
| atthtttaagt tgcaaaccac ttgcaaaaata tttttttatc caacttcaat gatagggtatt | 240 |
| gctgttaatt ctaagatatg cattaattgt ttcaactaat ggggtgtcaaa cgagatgttc   | 300 |
| tgaaaatgaa ggcaaaaagg agatccacct tctactttca taaagtttct atcttcctct    | 360 |
| gctgactcaa ataagcattt aatacatttt ataacgaatt aattatgaat atatttcaaa    | 420 |
| taaataaatt atttccaagt gttcaaggaa attcagactt ctaatttgct ctgattctga    | 480 |
| aactaaaaca aatgctctgt gagagtttgc gtttccagtg aagtagcgtg agaaatccaa    | 540 |
| gtcagacagc tacatgaaac tacatttacc agctctctgc cagacaccag tgcacgatag    | 600 |
| cgcagaacat gtagctagat ctgagtcata gctnnnnnnn nnnnnnnnnn agaccttgca    | 660 |
| gttggtctttt aacctgaagg agataaggca agattccagg gtttatttag agaaattaca   | 720 |



## 41426-GC

```

ggatctggga ataaagtagt tacaaaatta gtccccaacc agctttcatg gagctttcaa 780
ttattaatta ttctagttct taatcgcatg catacaatgc acatacatat atacatgcat 840
attaaaatac atgattggac gcaaacggaa ataacattgg acctgtgcat aaaacagaaa 900
gacttggtta gagtgagggg tcaggaaaca ccacactgag gacgagatgn nnnnnnnnnn 960
ntagtgggtg gggggcggac atcaataaag aactcttctg tgtcagccac tgagcacgga 1020
ataaagggat gagagtgagg gcaantacca gaagaataaa atccttttaa gagatgaaga 1080
ttgttatgag cacagtgtgt ggnttcaaaa atcttttaac aacccaagg tgaagctagt 1140
tggaagatat ttgaatttgt ttaaaccat ctggtggtag ccctattctt tgaatcccga 1200
aagaggggtca agaattccga gcaggagtgg actacctggt gataccttag actagtcctg 1260
tgtattaaag tccaatgagg agtatcttgg taaaataata aataaagtcc cgaaaatccc 1320
agtactctgc taggagattt acatgctata ttatttacta tnnnnhnnnt aatttgcaga 1380
taatattatc ctcatcataa aatagggtaa ctaacgctga gagggactcg gtaacttggt 1440
caaggccact aagaagtggc aaagtcaaaa ctggaatttt aataaaagag tctagcttgc 1500
ctgtgtggtt ctgcttttct tagaaagttg gannaagtct camatcagta cccaggaaaa 1560
acagcaaaag acccgctggt aaagacctgt ccagattgct gacctggttc acacanntcc 1620
aagcttgctt ctgttacttc caaggaacaa agaatgcaca gagaggtaaa aaaacaaaca 1680
aaccaaacaa aacaaaacaa aacaaaacaa aacaaaacaa aagcaaaaaa aaacttcttc 1740
tgtcttgagc ggctccagca cttggaacct tctacgtcc tantttcagg ttctctcagt 1800
tctaccctca acctgagtga ctgtcctacc agcagcttgt cgagaactca gccctgcacc 1860
gttcccagct accctcctcc taactcgagg ggtgct 1896

```

<210> 94

<211> 1280

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (315)..(320)

<223> n=any nucleotide

<220>

&lt;221&gt; misc\_feature

&lt;222&gt; (1038)..(1039)

&lt;223&gt; n=any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (453)..(453)

&lt;223&gt; n=any nucleotide

&lt;400&gt; 94

```

ggattctggt gagccctagc tcattatgat gtcctgttgt cctacccaaa taagactcat      60
cccaactaca tctcaataat taatgaagat ggaaatgagg taaaaaataa ataaataaat      120
aaaagaaaca ttccccccca tttattatgt tttcaaatac cttctatgaa ataatgttct      180
atccctctct aaatattaat agaaatcaat attattgcaa ctgtgaatac ctttaatatc      240
tcattatccg gtgtcaacta ctttcctatg atgttgagtt actgggttta gaagtcggga      300
aataatgctg taaannnnnn agttagtcta cacaccaata tcaaatatga tatacttgta      360
aacctccaag cataaaaaga gatactttat aaaagagggt ctttttttct tttttttttt      420
tccagatgga gtttcactcc tgtcaggcag gcngagtgca gtggtgccat ctcggtcac      480
tgcaacctcc acctcccatg ttcaagggat tctccttctc cagtctctct agtagctggg      540
attacagggt tgcaccacca caccagcta atttttgtat ttttaataga gacagggttt      600
catcgatggt ggccaggcta gtctcgaact cctgacctct aggtgatcca cccgcctcag      660
cctcccaaag ttctacaatt acacgtgtga ggactgctc tggccaggag atacattttt      720
gatagggtta atttataaag aactgcaca gatttgaggt tgctgggaaa tcacgatcca      780
gtatgcattt gaccagcaa tttttattgg tacttaatga ttatatctca attgatcagg      840
ttgaactctg tgcgaagaat ttgtgtgtgg acatttgaga ggacagtttg gaggcaaggt      900
attttagtag atttaaagaa tttgaatctt gtttgcaagt tggggcatat actgagaaag      960
agaagacaat gcagataaat tgatatattt attatgatgt atgttcaata tgaaagatca     1020
caaaatataa catacatnna tcttacttaa catacctcag ttttagagct accgtatgta     1080
gaagagtcca tttctattta ggtaagttcc tttagtcctt ttattactgg gcactcttaa     1140
ttacatgtag cttgaaatat gtccagtttg agcagtgaac tgaaaatgtc atgtgattaa     1200
gtacatatat aatttttttt catagtaggt caataacctc cttttattgt ctaatgaatc     1260
agttctctaa tgattatacg                                     1280

```

<210> 95  
<211> 1242  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (381)..(388)  
<223> n=any nucleotide

<220>  
<221> misc\_feature  
<222> (1091)..(1091)  
<223> n=any nucleotide

<220>  
<221> misc\_feature  
<222> (1167)..(1172)  
<223> n=any nucleotide

<220>  
<221> misc\_feature  
<222> (1212)..(1212)  
<223> n=any nucleotide

<220>  
<221> misc\_feature  
<222> (975)..(975)  
<223> n=any nucleotide

<220>  
<221> misc\_feature

<222> (978)..(978)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (982)..(982)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (676)..(681)

<223> n=any nucleotide

<220>

<221> misc\_feature

<222> (721)..(721)

<223> n=any nucleotide

<400> 95

|   |     |
|---|-----|
| aatcaaaata aaacagttaa agtttgatta ctataatcaa acacaaaaaa aatgaatatt | 60  |
| atcttttatg tcagtagagg gtgaatgaat ccttcaggat tttgatgata gtatcagata | 120 |
| cccagcacta tgctagaagt tgtgaagaat tcacgagatg aataaatcac agattctgtc | 180 |
| ctcaaaatgg ttagatctat tcaggaaaca aagctaaaaa aaccccacca ataactaaaa | 240 |
| atcaaccaa tgaaaaaaca caatcataaa ataagtaagt acctatagaa agaaaagctc  | 300 |
| agaggaggta aaaagataac tcttccaaaa ggaatactat atactgtaaa ctgtgtactg | 360 |
| atagaaggaa gaattagaaa nnnnnnnntg taagtggcat acatactaag ctagtgtgaa | 420 |
| cacaagccta aatatgtagt tgcttcacag aaggtagaa gtaaattaac ctcatgaatt  | 480 |
| tcttgagaga acttgtaagg actaagcttt cgattttgga gaaagatttt aataccaaat | 540 |
| aaaaagtacc tttgtttggt aatctcaatc attataatag tgcttagata atacctagga | 600 |
| acaaattaaa tattaaattt actttaaaaa aaagtacatg attggggaat cacaacaggc | 660 |
| cttactagat tctctnnnnn natatgcact gaaaagaatg aaaaacactg aaccaaatat | 720 |
| ntgttttttt aagtttaaaa ttaaattgga aaaaaatagt aaggaatatc agaagcaaaa | 780 |
| aaataaaatg aaagcaagaa tcctcagagg tagcacgaaa tttggctttg cttagatgga | 840 |

## 41426-GC

|  |      |
|--|------|
| tctatcaaag ctatggccca tgaaaaggat tcaggagtta gtttaaagct ggttcacata  | 900  |
| atggaatcta gcagaagact gtgcataaag gtggtctaag aacaacaata tcctgaccag  | 960  |
| gtgagggggc tcacnctnaa tnccagcact ttgggagccc aagggtgggtg gatcacgagg | 1020 |
| tcaggagttt gagaccagcc tgaccaacat ggtgaaaccg cgtctctact aaaaatagaa  | 1080 |
| aaattagccg ngcctacgtg cttctaattcc cagctgaact caggagactg agacaggaga | 1140 |
| ataccttcaa cccagcatgc aagcttnnnn nngccactgc actccagcct aggggtgcaaa | 1200 |
| aaaaaaaaaa angacacatt actcaggtaa ggtaatcaat aa                     | 1242 |

&lt;210&gt; 96

&lt;211&gt; 783

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 96

|   |     |
|---|-----|
| aaggtaaaaa ttatctcttt ttttctctcc cccaatgtaa aaagttatag tgggttttac   | 60  |
| atgtgtagaa tcattttctt aaaactttat gaataccatt attttcttgt attctgtgac   | 120 |
| atgccacact tacagagagg acacatttac taggttatat cccggggtta aattcgagga   | 180 |
| ttggaatttg gccagtgtag atgtttagag tgaacagaac aaatttttct gtgcttacag   | 240 |
| gttatggctg tggcctacaa gaagcatgca ctgggtttat tattaacttt cagtatcttt   | 300 |
| gttttaaata ttttctacaa aaatgtttac taaattaaat tgtagtatga attgttataa   | 360 |
| ataatgaggg aaaacaattt acacatagca aatttaaaaa ttactgtcat ttgatttggt   | 420 |
| aatatatattt tctcttttagt gggaaattaa attttaaaaa attccctttc gactgtagaa | 480 |
| caaataggaa tttggcctgt ggggtctact tgcttattat atttgtaagc tagtggtagg   | 540 |
| aatagcaaa tgctcactac cactaataag aacatttcta aatctgatgt tctgaggatt    | 600 |
| tttagagctt atagtagcaa aaagaaaagg gaaattctat ccgagatgtc ctttgttgta   | 660 |
| ggcctaata gaaaaggttg aagataaagt tctgggtactc atttaagtgt aatattgaaa   | 720 |
| attgatatta ccgaatctgg aacaaccaat ttaaaataag gaaagaaaga cactgtgttt   | 780 |
| tct   | 783 |

&lt;210&gt; 97

&lt;211&gt; 782

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (505)..(505)

&lt;223&gt; n=any nucleotide

&lt;400&gt; 97

```

agaaaacaca gtgtctttct ttccttattt taaattgggt gttccagatt cggtaatatc      60
aattttcaat attacactta aatgagtacc agaactttat cttcaacctt ttctcattag      120
gcctacaaca aaggacatct cggatagaat ttcccttttc tttttgctac tataagctct      180
aaaaatcctc agaacatcag atttagaaat gttcttatta gtggtagtga gcatttgcta      240
tttcctacca ctagcttaca aatataataa gcaagtagac cccacaggcc aaattcctat      300
ttgttctaca gtcgaaaggg aattttttta aatttaattt ccactaaag agaaaaatat      360
attaacaaat caaatgacag taatttttaa atttcgtatg tgtaaattgt tttccctcat      420
tatttataac aattcatact acaatttaat ttagtaaaca tttttgtaga aaatatttaa      480
aacaagata ctgaaagtta atatnaaacc cagtgcattg ttcttgtagg ccacagccat      540
aacctgtaag cacagaaaaa tttgttctgt tactctaaac atctacactg gccaaattcc      600
aatgctcgaa tttaaccccg ggatataacc tagtaaattg gtcctctctg taagggtggc      660
atgtcacaga atacaagaaa ataatggtat tcataaagtt ttaagaaaat gattctacac      720
atgtaaaacc cactataact ttttacattg ggggagagaa aaaaagagat aatttttacc      780
tt                                                                                   782

```

&lt;210&gt; 98

&lt;211&gt; 1079

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (262)..(268)

&lt;223&gt; n=any nucleotide

&lt;220&gt;

<221> misc\_feature  
 <222> (545)..(550)  
 <223> n=any nucelotide

<220>

<221> misc\_feature  
 <222> (900)..(907)  
 <223> n=any nucelotide

<220>

<221> misc\_feature  
 <222> (917)..(917)  
 <223> n=any nucelotide

<220>

<221> misc\_feature  
 <222> (955)..(955)  
 <223> n=any nucelotide

<220>

<221> misc\_feature  
 <222> (1009)..(1009)  
 <223> n=any nucelotide

<400> 98  
 gatgctatTTT gggcaatttc ttattgacag ttttgaaatg ttaggctttt atctccattt 60  
 ttttagtactt aaattttcca acatgggtgt tgcttggttat tttgtcagta taaaatagaa 120  
 gagtggttct gttctggaat ttagtatata catgagtatc tagtgtatgt cagccatgaa 180  
 aatgaacctt tcagatgttt aacttcaggg aacctaattg agtcattgct ccagacattg 240  
 ttgctttgaa cccactatat tnnnnnnnct cgggcaatga ctcagtgtgg caaggatact 300  
 actgcaggcc tgtttctgga aggcaactgga ctctctgat gcaaactttg gccagggact 360  
 ccttgatagc tgttaaatag atgctgcacc aacactctct ttcttttctc tctttttctt 420  
 tattcaatat tagactacaa gcagtctaag gacttctcag ggtttctagc tctctctcat 480

## 41426-GC

```

ttcacacatg ctttcctagt aatctctact catatatctt actgctacgc tggggccaga    540
taacnnnnnn cttccatttt gtttttatct ctattcttct tccccttctg ctttcattat    600
tgaaactttc tgctttcatt attgaaactt tcccagattt gttctgctta acctggcatt    660
ggaactgttt cctcttccct gtgctgcttt ctcccattgc catgtccttt tttttttttt    720
tttttttttt tgagacagtg tcaactctgtt gcccaggctg gaggcgcaatg gtgcaatctt    780
ggccactgca acccccgccct cccgggttca agtgattctc ctgcctcagc ctctgagta    840
gctgggatta caggtgccca ccactatgcc cggctgattt ttgtattttt agtagagatn    900
nnnnnnnttt caccatngct gatcaggctg gtctcgaact cctgaccgca gtgantccgc    960
cctccttggc ctcccaaagt gctgagatta caggcatgag tcaactgcgc cagccaccat   1020
tattctctag aggtgagaga aactggctc ttctaacaag ttgaaatttg atagagacc   1079

```

&lt;210&gt; 99

&lt;211&gt; 1977

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (840)..(843)

&lt;223&gt; n=any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1294)..(1295)

&lt;223&gt; n=any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1338)..(1343)

&lt;223&gt; n=any nucleotide

&lt;220&gt;



<221> misc\_feature  
 <222> (1965)..(1966)  
 <223> n=any nucleotide

<220>

<221> misc\_feature  
 <222> (1096)..(1101)  
 <223> n=any nucleotide

<400> 99  
 cacaaaaaaa gattattagc cacaaaaaaa ccttgaagta acgcattaaa atgttaatgg 60  
 attcacttta ttgagcatct gtcataata ctttaatgag tgcaaagtgc tttgaatata 120  
 atacgtcatt taaaccttac cataattctg aggaattgct acctccactt cacagatggg 180  
 gcacaggagg cttagataac atgccccaaag tcatgcttct agtaaattgga tataattaag 240  
 attcaaatta ttgataagaa tttgatctgc cttaccagta tctagtagta aatctaaaag 300  
 cgctttccag agcatgtgct gttgatagag cttgatgtct aactctctga aattttccat 360  
 tcttatttgt ctactggta tatagttatt ttttactact ttcatacacc tactaagaag 420  
 acaggaggat caaagatagg atttcattta gaatgcctaa agcttcacgt attttaattc 480  
 agaataagat tcaggcagac caccagtata tgccatggtc cctgggtatc tttcagcagg 540  
 tgaccgagaa agaaaacatg gtaatgttta tgaaatggtg ggttcttgta gtttcacttc 600  
 aacatatctg cttttactgt attaagatga tggattaact tattcttgat atgggcatgt 660  
 aaaacaatat acttttacta aacagctaca gagagacaaa tgtgtttcca gacaaactta 720  
 agagactgag tgttcaaact gaataatctc gaccttaatt gtaactatat tttatgaaat 780  
 ccagctgtaa ggcaaaaaca gacttctttg ggctaccac gggcattttg ttctgttan 840  
 nnntactcca aaccttaaac ccacgtccac ttaaataatg gcctggaaat aaatgtcaat 900  
 atctgatatt atactgagat gtttagttat gaaatcaaaa gtggagaatt tcaatctgtc 960  
 ctgtaagctt tctctgcggt cacgaccctc atgcactcag gctgtgcggt gcagcatgct 1020  
 ctgtcatgtc tgttttcttc tgccgtgtaca cgggtggttg ttctgtcta cctgtttgag 1080  
 gaaatatgaa tacgtnnnnn nctagaatct actgcacatg caataaggaa acaatcagta 1140  
 agaatcactt tctcgtggaa aattcattag aattaacatc tcgttttaaa atgctctatc 1200  
 aaagtgtaaa taattcctct ctcttttccc tttttacta aggagtttgt atattaaaca 1260  
 gaatttcaag taatgtatta taaatttatt taanntattht acaataaaaat gccacgtata 1320  
 agcatcaagc aacatgannn nnncattggt agaaagcaca atacatagtc aaaacagcag 1380

## 41426-GC

```

agtattaaat aaacagaaaa tttgcaaaag gcaagtaaag aatatacata tacttaatta 1440
tacataaaat attgatacag gaggtagaaa gaaatttagt aagcagataa tgggggcaac 1500
agagtctca gcagagcttc ccttctaaca aaaagcagcc caataaatta tttttttttt 1560
ctaacaaaaa gcagcctgaa aaatcgagct gcaaacatag attagcaatc ggctgaaagt 1620
gcgggagaat gctggcagct gtgccaatag taaagggcta cctggagccg ggcgcggtggc 1680
tcacgctgta atcccagcac tttgggaggg cgaggcaacg cggatcacct gaggtcggga 1740
gtttgagatc agcccgacca acatggagaa acccgcgtctc tactaaaaaa aaaaaaaaaa 1800
aaaggcaaaa aatgagccgg gcatggtggc acatgccttg cacatcccag ctgaggcagg 1860
agaattcact tgaacctggg aggtagagat tgcggtgaag cgagatcacg tcattgcact 1920
ccagcctggg caaaaagagc aâaacttagt ctcaaaaaaa aaaanncaaa gaaaaaa 1977

```

&lt;210&gt; 100

&lt;211&gt; 2387

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 100

```

ctcaaaaggg gccggatttc cttctcctgg aggcagatgt tgcctctctc tctcgctcgg 60
attggttcag tgcactctag aaacactgct gtggtggaga aactggaccc caggggtggtt 120
tataaaatcc tccaatgaag ctactaacat tactccaaag cataatatga aagcattttt 180
ggatgaattg aaagctgaga acatcaagaa gttcttatat aattttacac agataaccaca 240
tttagcagga acagaacaaa actttcagct tgcaaagcaa attcaatccc agtggaagaa 300
atttggcctg gattctgttg agctagcaca ttatgatgtc ctgttgtcct acccaaataa 360
gactcatccc aactacatct caataattaa tgaagatgga aatgagattt tcaacacatc 420
attatttgaa ccacctctc caggatatga aaatgtttcg gatattgtac cacctttcag 480
tgctttctct cctcaaggaa tgccagaggg cgatctagtg tatgttaact atgcacgaac 540
tgaagacttc tttaaattgg aacgggacat gaaaatcaat tgctctggga aaattgtaat 600
tgccagatat gggaaagttt tcagaggaaa taagggttaa aatgcccagc tggcaggggc 660
caaaggagtc attctctact ccgaccctgc tgactacttt gctcctgggg tgaagtcta 720
tccagatggt tggaatcttc ctggaggtgg tgtccagcgt ggaaatatcc taaatctgaa 780
tggtgcagga gaccctctca caccaggtta ccagcaaata gaatatgctt ataggcgtgg 840
aattgcagag gctgttggtc ttccaagtat tcctgttcat ccaattggat actatgatgc 900
acagaagctc ctagaaaaaa tgggtggctc agcaccacca gatagcagct ggagaggaag 960

```

## 41426-GC

```

tctcaaactg ccctacaatg ttggacctgg ctttagtgga aacttttcta cacaaaaact 1020
caagatgcac atccactcta gcaatgaact gacaagaatt tacaatgtga taggtagtct 1080
cagaggagca gtggaaccag acagatatgt cattctggga ggtcaccggg actcatgggt 1140
gtttggtggt attgaccctc agagtggagc agctgttggt catgaaattg tgaggagctt 1200
tggaacactg aaaaaggaag ggtggagacc tagaagaaca attttgtttg caagctggga 1260
tgcagaagaa tttggtcttc ttggttctac tgagtgggca gaggagaatt caagactcct 1320
tcaagagcgt ggcgtggctt atattaatgc tgactcatct atagaaggaa actacactct 1380
gagacttgat tgtacaccgc tgatgtacag cttggtacac aacctaacaa aagagctgaa 1440
aagccctgat gaaggctttg aaggcaaatc tctttatgaa agttggacta aaaaaagtcc 1500
ttccccagag ttcagtggca tgcccaggat aagcaaattg ggatctggaa atgattttga 1560
ggtgttcttc caacgacttg gaattgcttc aggcagagca cggtatagta aaaattggga 1620
aacaacaaaa ttcagcggct atccactgta tcacagtgtc tatgaaacat atgagttggt 1680
ggaaaagttt tatgatccaa tgtttaaata tcacctcact gtggcccagg ttcgaggagg 1740
gatggtgttt gagctagcca attccatact gctccctttt gattgtcgag attatgctgt 1800
acttttaaga aagtatgctg acaaaatcta cagtatttct atgaaacatc cacaggaaat 1860
gaagacatac agtgtatcat ttgattcact tttttctgca ctaaagaatt ttacagaaat 1920
tgcttccaag ttcagtgaga gactccagga ctttgacaaa agcaacccaa tactattaag 1980
aatgatgaat gatcaactca tgtttctgga aagagcattt attgatccat tagggttacc 2040
agacaggcct ttttataggc atgtcatcta tgctccaagc agccacaaca agtatgcagg 2100
ggagtcattc ccaggaatth atgatgctct gtttgatatt gaaagcaaac tggacccttc 2160
caaggcctgg ggagaagtga agagacagat ttatgttgca gccttcacag tgcaggcagc 2220
tgcagagact ttgagtgaag tagcctaaga ggattcttta gagaatccgt attgaatttg 2280
tgtggtatgt cactcagaaa gaatcgtaat gggatatattg ataaatttta aaattggtat 2340
atttgaataa aagttgaata ttatatataa aaaaaaaaaa aaaaaaa 2387

```

&lt;210&gt; 101

&lt;211&gt; 693

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 101

```

Met Lys Ala Phe Leu Asp Glu Leu Lys Ala Glu Asn Ile Lys Lys Phe
1           5           10           15

```

41426-GC

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Asn | Phe | Thr | Gln | Ile | Pro | His | Leu | Ala | Gly | Thr | Glu | Gln | Asn | 20  | 25  | 30  |     |
| Phe | Gln | Leu | Ala | Lys | Gln | Ile | Gln | Ser | Gln | Trp | Lys | Glu | Phe | Gly | Leu | 35  | 40  | 45  |     |
| Asp | Ser | Val | Glu | Leu | Ala | His | Tyr | Asp | Val | Leu | Leu | Ser | Tyr | Pro | Asn | 50  | 55  | 60  |     |
| Lys | Thr | His | Pro | Asn | Tyr | Ile | Ser | Ile | Ile | Asn | Glu | Asp | Gly | Asn | Glu | 65  | 70  | 75  | 80  |
| Ile | Phe | Asn | Thr | Ser | Leu | Phe | Glu | Pro | Pro | Pro | Pro | Gly | Tyr | Glu | Asn | 85  | 90  | 95  |     |
| Val | Ser | Asp | Ile | Val | Pro | Pro | Phe | Ser | Ala | Phe | Ser | Pro | Gln | Gly | Met | 100 | 105 | 110 |     |
| Pro | Glu | Gly | Asp | Leu | Val | Tyr | Val | Asn | Tyr | Ala | Arg | Thr | Glu | Asp | Phe | 115 | 120 | 125 |     |
| Phe | Lys | Leu | Glu | Arg | Asp | Met | Lys | Ile | Asn | Cys | Ser | Gly | Lys | Ile | Val | 130 | 135 | 140 |     |
| Ile | Ala | Arg | Tyr | Gly | Lys | Val | Phe | Arg | Gly | Asn | Lys | Val | Lys | Asn | Ala | 145 | 150 | 155 | 160 |
| Gln | Leu | Ala | Gly | Ala | Lys | Ala | Val | Ile | Leu | Tyr | Ser | Asp | Pro | Ala | Asp | 165 | 170 | 175 |     |
| Tyr | Phe | Ala | Pro | Gly | Val | Lys | Ser | Tyr | Pro | Asp | Gly | Trp | Asn | Leu | Pro | 180 | 185 | 190 |     |
| Gly | Gly | Gly | Val | Gln | Arg | Gly | Asn | Ile | Leu | Asn | Leu | Asn | Gly | Ala | Gly | 195 | 200 | 205 |     |
| Asp | Pro | Leu | Thr | Pro | Gly | Tyr | Pro | Ala | Asn | Glu | Tyr | Ala | Tyr | Arg | Arg | 210 | 215 | 220 |     |
| Gly | Ile | Ala | Glu | Ala | Val | Gly | Leu | Pro | Ser | Ile | Pro | Val | His | Pro | Ile | 225 | 230 | 235 | 240 |
| Gly | Tyr | Tyr | Asp | Ala | Gln | Lys | Leu | Leu | Glu | Lys | Met | Gly | Gly | Ser | Ala | 245 | 250 | 255 |     |
| Pro | Pro | Asp | Ser | Ser | Trp | Arg | Gly | Ser | Leu | Lys | Val | Pro | Tyr | Asn | Val | 260 | 265 | 270 |     |

## 41426-GC

Gly Pro Gly Phe Thr Gly Asn Phe Ser Thr Gln Lys Val Lys Met His  
 275 280 285  
 Ile His Ser Thr Asn Glu Val Thr Arg Ile Tyr Asn Val Ile Gly Thr  
 290 295 300  
 Leu Arg Gly Ala Val Glu Pro Asp Arg Tyr Val Ile Leu Gly Gly His  
 305 310 315 320  
 Arg Asp Ser Trp Val Phe Gly Gly Ile Asp Pro Gln Ser Gly Ala Ala  
 325 330 335  
 Val Val His Glu Ile Val Arg Ser Phe Gly Thr Leu Lys Lys Glu Gly  
 340 345 350  
 Trp Arg Pro Arg Arg Thr Ile Leu Phe Ala Ser Trp Asp Ala Glu Glu  
 355 360 365  
 Phe Gly Leu Leu Gly Ser Thr Glu Trp Ala Glu Glu Asn Ser Arg Leu  
 370 375 380  
 Leu Gln Glu Arg Gly Val Ala Tyr Ile Asn Ala Asp Ser Ser Ile Glu  
 385 390 395 400  
 Gly Asn Tyr Thr Leu Arg Val Asp Cys Thr Pro Leu Met Tyr Ser Leu  
 405 410 415  
 Val His Asn Leu Thr Lys Glu Leu Lys Ser Pro Asp Glu Gly Phe Glu  
 420 425 430  
 Gly Lys Ser Leu Tyr Glu Ser Trp Thr Lys Lys Ser Pro Ser Pro Glu  
 435 440 445  
 Phe Ser Gly Met Pro Arg Ile Ser Lys Leu Gly Ser Gly Asn Asp Phe  
 450 455 460  
 Glu Val Phe Phe Gln Arg Leu Gly Ile Ala Ser Gly Arg Ala Arg Tyr  
 465 470 475 480  
 Thr Lys Asn Trp Glu Thr Asn Lys Phe Ser Gly Tyr Pro Leu Tyr His  
 485 490 495  
 Ser Val Tyr Glu Thr Tyr Glu Leu Val Glu Gly Phe Tyr Asp Pro Met  
 500 505 510  
 Phe Lys Tyr His Leu Thr Val Ala Gln Val Arg Gly Gly Met Val Phe  
 515 520 525

41426-GC

Glu Leu Ala Asn Ser Ile Val Leu Pro Phe Asp Cys Arg Asp Tyr Ala  
530 535 540

Val Val Leu Arg Lys Tyr Ala Asp Lys Ile Tyr Ser Ile Ser Met Lys  
545 550 555 560

His Pro Gln Glu Met Lys Thr Tyr Ser Val Ser Phe Asp Ser Leu Phe  
565 570 575

Ser Ala Val Lys Asn Phe Thr Glu Ile Ala Ser Lys Phe Ser Glu Arg  
580 585 590

Leu Gln Asp Phe Asp Lys Ser Asn Pro Ile Val Leu Arg Met Met Asn  
595 600 605

Asp Gln Leu Met Phe Leu Glu Arg Ala Phe Ile Asp Pro Leu Gly Leu  
610 615 620

Pro Asp Arg Pro Phe Tyr Arg His Val Ile Tyr Ala Pro Ser Ser His  
625 630 635 640

Asn Lys Tyr Ala Gly Glu Ser Phe Pro Gly Ile Tyr Asp Ala Leu Phe  
645 650 655

Asp Ile Glu Ser Lys Val Asp Pro Ser Lys Ala Trp Gly Glu Val Lys  
660 665 670

Arg Gln Ile Tyr Val Ala Ala Phe Thr Val Gln Ala Ala Ala Glu Thr  
675 680 685

Leu Ser Glu Val Ala  
690

<210> 102

<211> 86

<212> PRT

<213> Homo Sapiens

<400> 102

Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Ala Ala Arg  
1 5 10 15

Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly Gly Phe  
20 25 30

41426-GC

Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu  
 35 40 45

Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu  
 50 55 60

Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu Tyr Asn Phe Thr Gln Ile  
 65 70 75 80

Pro Ile Leu Ala Gly Thr  
 85

<210> 103

<211> 7

<212> DNA

<213> Homo sapiens

<400> 103

tkagtca

7

<210> 104

<211> 12

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (4)..(9)

<223> n=any nucleotide

<400> 104

accnnnnnng gt

12

<210> 105

<211> 11

<212> DNA

<213> Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(3)

&lt;223&gt; n=any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (9)..(11)

&lt;223&gt; n=any nucleotide

<400> 105  
nnntaaatnn n

11

&lt;210&gt; 106

&lt;211&gt; 8

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (4)..(4)

&lt;223&gt; n=any nucleotide

<400> 106  
gggnggrr

8

&lt;210&gt; 107

&lt;211&gt; 10

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<400> 107  
gggrhtyyhc

10



<210> 108  
 <211> 8  
 <212> DNA  
 <213> Homo sapiens

<400> 108  
 ryywsgtg 8

<210> 109  
 <211> 13  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (6)..(6)  
 <223> n=any nucleotide

<400> 109  
 aawaangaaa ggr 13

<210> 110  
 <211> 61  
 <212> DNA  
 <213> Homo sapiens

<400> 110  
 tttttttttg ccttttgttt tgttttgttt tgttttgttt tttgtttttt 60  
 t 61

<210> 111  
 <211> 69  
 <212> DNA  
 <213> Homo sapiens

41426-GC

<400> 111  
 tttttttttg cttttgtttt gttttgtttt gttttgtttt gttttgtttt gtttgtttgt 60  
 ttgtttttt 69

<210> 112

<211> 52

<212> DNA

<213> Homo sapiens

<400> 112  
 tttttttttt gcttttgttt tgttttgttt tgttttgttt gtttgttttt tt 52

<210> 113

<211> 61

<212> DNA

<213> Homo sapiens

<400> 113  
 tttttttttt gcttttgttt tgttttgttt tgttttgttt tgtttgtttg tttgtttttt 60  
 t 61

<210> 114

<211> 60

<212> DNA

<213> Homo sapiens

<400> 114  
 tttttttttg cttttgtttt gttttgtttt gttttgtttt gtttgtttgt ttgttttttt 60

<210> 115

<211> 59

<212> DNA

<213> Homo sapiens

<400> 115  
 tttttttttg cttttgtttt gttttgtttt gttttgtttt gtttgtttgt ttgttttttt 59

<210> 116

<211> 21

<212> DNA

<213> Homo sapiens

<400> 116

ctcaaaaggg gccggatttc c

21

<210> 117

<211> 21

<212> DNA

<213> Homo sapiens

<400> 117

ctctcaatct actaatgcct c

21

<210> 118

<211> 20

<212> DNA

<213> Homo sapiens

<400> 118

taccactgc atcaggaaca

20

<210> 119

<211> 20

<212> DNA

<213> Homo sapiens

<400> 119

ccttgaagca caccattaca

20

<210> 120

<211> 20

<212> DNA

<213> Homo sapiens

<400> 120  
acacaggcca cctatttcag 20

<210> 121

<211> 20

<212> DNA

<213> Homo sapiens

<400> 121  
gtccagcgtc cagcacacag 20

<210> 122

<211> 23

<212> DNA

<213> Homo sapiens

<400> 122  
cagatatgtc attctgggag gtc 23

<210> 123

<211> 21

<212> DNA

<213> Homo sapiens

<400> 123  
aacaccatcc ctctctgaac c 21

<210> 124

<211> 24

<212> DNA

<213> Homo sapiens

<400> 124  
cctaacaaaa gagctgaaaa gccc 24

<210> 125

41426-GC

<211> 24  
 <212> DNA  
 <213> Homo sapiens

<400> 125  
 actgtgatac agtggatagc cgct 24

<210> 126  
 <211> 21  
 <212> DNA  
 <213> Homo sapiens

<400> 126  
 agcagagaat ggaaagtcaa a 21

<210> 127  
 <211> 21  
 <212> DNA  
 <213> Homo sapiens

<400> 127  
 tgttgatgtt ggataagaga a 21

<210> 128  
 <211> 3017  
 <212> DNA  
 <213> Homo sapiens

<400> 128  
 gcgccttaaa aaaaaaaaaac tttcttggaa aatgtccagc tcttgcttaa atataaaaat 60  
 gaaaggaaga aagagactct cctctctcca ctctataat tatgaggaac ttttattcaa 120  
 ctctgaaatt ctatacaatc tctacaatac tctactgaat aaaagcagag cagaaaaagc 180  
 tgcgcttttt ttccatagtc gggaatgctt gtcatcagtg taaatcacca ccgcgccctt 240  
 tttcctaaag aatattattg ttattaataa acatgtaggg tattatcctc cacttacatt 300  
 aaaaaacat tttttaaaagc cgggctgtgt ggctcacgcc tgtaatccca gcactttggg 360  
 aggcccagac aggcggatca cgaagtcgag aaatcgagac catcctggcc aacatggtga 420

## 41426-GC

|            |              |             |            |             |            |      |
|------------|--------------|-------------|------------|-------------|------------|------|
| aaccccatct | ctactaaaaa   | tacaaaaaatt | agctgggcgt | ggtggcgggc  | tcctgtagtc | 480  |
| ccagctactc | aggaggctga   | ggcaggagaa  | tcgcttgaac | cggggaggcg  | gaggttgcag | 540  |
| tcagccaaga | tagcgccact   | gcactggagc  | ctggtgacag | agtgagactc  | cctcaagaaa | 600  |
| gaaaggaagg | gaagggaaaag  | ggaaggaagg  | ggaggggaag | ggaggggagg  | ggaggggagg | 660  |
| aaagaaaaga | atactggaac   | ttgttgaagg  | cagagacttt | attttcatat  | cccggctatg | 720  |
| tctggctact | gtcttacgta   | atagatataa  | aatcaatctt | ggttggatta  | accagaagaa | 780  |
| tgagaagata | tattctggta   | agttgaatac  | ttagcaccca | ggggaatca   | gcttggacag | 840  |
| gaccaggtcc | aaagactgtt   | aagagtcttc  | tgactccaaa | ctcagtgctc  | cctccagtgc | 900  |
| cacaagcaaa | ctccataaag   | gtatcctgtg  | ctgaatagag | actgtagagt  | ggtacaaagt | 960  |
| aagacagaca | ttatatattaag | tcttagcttt  | gtgacttcga | atgacttacc  | taatctagct | 1020 |
| aaatttcagt | tttaccatgt   | gtaaatacagg | aagagtaata | gaacaaacct  | tgaagggtcc | 1080 |
| caatggtgat | taaatgaggt   | gatgtacata  | acatgcatca | ctcataataa  | gtgctcttta | 1140 |
| aatattagtc | actattatta   | gccatctctg  | attagatttg | acaataggaa  | cattaggaaa | 1200 |
| gatatagtac | attcaggatt   | ttgttagaaa  | gagatgaaga | aattcccttc  | cttcctgccc | 1260 |
| taggtcatct | aggagttgtc   | atggttcatt  | gttgacaaat | taattttccc  | aaatttttca | 1320 |
| ctttgctcag | aaagtctaca   | tcgaagcacc  | caagactgta | caatctagtc  | catctttttc | 1380 |
| cacttaactc | atactgtgct   | ctccctttct  | caaagcaaac | tgtttgctat  | tccttgaata | 1440 |
| cactctgagt | tttctgcctt   | tgctactca   | gctggcccat | ggcccctaata | gtttcttctc | 1500 |
| atctccactg | ggtcaaatcc   | tacctgtacc  | ttatggttct | gttaaaagca  | gtgcttccat | 1560 |
| aaagtactcc | tagcaaatgc   | acggcctctc  | tcacggatta | taagaacaca  | gtttatttta | 1620 |
| taaagcatgt | agctattctc   | tcctcgaag   | tacgattatt | attattaaga  | atttatagca | 1680 |
| gggatataat | tttgtatgat   | gattcttctg  | gttaatccaa | ccaagattga  | ttttatatct | 1740 |
| attacgtaag | acagtagcca   | gacatagccg  | ggatatgaaa | ataaagtctc  | tgccctcaac | 1800 |
| aagttccagt | attcttttct   | ttcctcccct  | cccctcccct | cccttcccct  | ccccttcctt | 1860 |
| ccctttccct | tccttccctt   | tctttcttga  | gggagtctca | ctctgtcacc  | aggctccagt | 1920 |
| gcagtggcgc | tatcttggct   | gactgcaacc  | tcgcctccc  | cggttcaagc  | gattctcctg | 1980 |
| cctcagcctc | ctgagtagct   | gggactacag  | gagcccgcga | ccacgcccag  | ctaatttttg | 2040 |
| tatttttagt | agagatgggg   | tttcaccatg  | ttggccagga | tggtctcgat  | ttctcgactt | 2100 |
| cgtgatccgc | ctgtctgggc   | ctcccaaagt  | gctgggatta | caggcgtgag  | ccaccacgcc | 2160 |
| cggctttaaa | aaatggtttt   | gtaatgtaag  | tggaggataa | taccctacat  | gtttattaat | 2220 |
| aacaataata | ttcttttagga  | aaaagggcgc  | ggtggtgatt | tacactgatg  | acaagcattc | 2280 |
| ccgactatgg | aaaaaaagcg   | cagctttttc  | tgctctgctt | ttattcagta  | gagtattgta | 2340 |

41426-GC

|   |      |
|---|------|
| gagattgtat agaatttcag agttgaataa aagttcctca taattatagg agtggagaga | 2400 |
| ggagagtctc tttcttcctt tcatttttat atttaagcaa gagctggaca ttttccaaga | 2460 |
| aagttttttt tttttaaggc gcctctcaaa aggggccgga tttccttctc ctggaggcag | 2520 |
| atgttgctc tctctctcgc tcggattggt tcagtgcact ctagaaacac tgctgtggtg  | 2580 |
| gagaaactgg accccaggtc tggagcgaat tccagcctgc agggctgata agcgaggcat | 2640 |
| tagtgagatt gagagagact ttaccccgcc gtggtggttg gagggcgcg agtagagcag  | 2700 |
| cagcacaggc gcgggtcccg ggaggccgac tctgctcgcg ccgagatgtg gaatctcctt | 2760 |
| cacgaaaccg actcggtgtt ggccaccgac cgccgccgcg gctggctgtg cgctggggcg | 2820 |
| ctggtgctgg cgggtggctt ctttctctc ggcttcctct tcggtagggg ggcgctcgc   | 2880 |
| ggagcaaacc tcggagtctt ccccggtgtg ccgcggtgct gggactcgcg ggtagctgc  | 2940 |
| cgagtgggat cctgttgctg gtcttcccca gggcggcga ttagggtcgg ggtaatgtgg  | 3000 |
| ggtgagcacc cctcgag  | 3017 |